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ABSTRACT

The Client Observation Checklist (COC) was developed to evaluate Project ADAPT's intervention in three behavioral areas: bathing; dressing; and socialization. Project ADAPT is designed to provide services to meet the needs of chronically mentally ill residents of nursing homes. Specifically, the project provides staff trained to work with the mentally handicapped and therapeutic intervention to raise motivation levels. Fifteen clients of Project ADAPT at each of two facilities were selected for observation. Observations were made during the last 2 weeks of March 1984, before Project ADAPT had begun at either location. Two pairs of independent raters averaged 94.44% and 95.37% agreement, respectively, establishing very high reliability for the COC. The validity of the COC was determined by correlating subscale totals with case manager ratings on the Treatment Setting Determination Survey. Despite two sources of potential error variance, intercorrelations between bathing and dressing subscales/items all exceeded 0.70, establishing the validity of the COC. The COC required an average of 19.67 minutes to administer. The non-significant tendency for clients at one facility to have a higher level of functioning is described as consistent with the nonequivalent control group design used for evaluation. Two data tables and the COC are included. (TJH)

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Progress Report No. 32

Development of the Client Observation Checklist: Reliability, Validity, and Differences between Facilities Chosen to Receive Project ADAPT

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Summary

The Client Observation Checklist (COC) was developed to evaluate Project ADAPT's intervention in three behavioral areas; bathing, dressing, and socialization. Two pairs of independent raters averaged 94.44% and 95.37% agreement, establishing very high reliability for the COC. Validity of the COC was determined by correlating subscale totals with Casemanager ratings on the Treatment Setting Determination Survey. Despite two sources of potential error variance, intercorrelations between bathing and dressing subscales/items all exceeded .70, establishing the validity of the COC. The COC required an average of 19.67 minutes to administer; but, observers had to wait 17.87 minutes before rating the typical client. Facilities differed concerning the proportion of time that raters spent waiting to see clients. The nonsignificant tendency for clients at one facility to have a higher level of functioning is described as consistent with the Nonequivalent Control Group Design employed for the evaluation.

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Development of the Client Observation Checklist: Reliability, Validity, and Differences between Facilities Chosen to Receive Project ADAPT

In March, 1984, the St. Louis Regional Community Placement Program (CPP) selected four facilities to receive services from the Project ADAPT Institute. Project ADAPT is designed to provide two services to meet the specialized needs of chronically mentally ill residents of nursing homes: (1) staff who are trained to work with the mentally handicapped; and, (2) therapeutic intervention to raise motivation levels.

Project ADAPT had already been delivering services to residents at two other facilities since 1983. Client behaviors which Project ADAPT staff reported they had most frequently addressed at one of these facilities served as the basis for the proposed evaluation (Fitz, 1984A). The Client Observation Checklist (COC), which is the focus of the current report, was designed to record three client behaviors (bathing, dressing, and socialization) which could not be obtained by archival data. The final COC form which was used is given in Appendix A.

When Project ADAPT staff work with a client's activities of daily living (i.e., walking, eating, bathing, dressing, hygiene, continence, socialibility), they select a specific activity, divide it into component parts, and address one component at a time. The COC is intended to be a measurement which parallels the perspective of this approach.

The COC components for each subscale are modifications of Project ADAPT's own evaluation tools. Originally, the author had intended to use four items paraphrased from the Project ADAPT hygiene checklist ("washed independently"; "showered independently"; "combed own hair"; and, "shaved independently or put on own make-up"). However, CPP staff raters discovered that few, if any, clients chosen for observation showered and felt that the last two items would introduce strong sex differences. Therefore, CPP staff developed the COC "Bathing Checklist", which requires ratings of whether a client bathes each of four body areas. The Project ADAPT dressing checklist was modified in the following ways to form the COC "Dressing Checklist": the "cooperativeness" and "dresses appropriately" items were omitted since they seemed too subjective; a "selected own clothes" item was added; and, "snapped and hooked" were included with "zipping and buttoning". Since the Project ADAPT socialization items seemed to be nonspecific, CPP staff decided to use a structured interview while observing bathing and dressing. Responses to this interview provide scores for the COC "Socialization Checklist".

Approximately 159 clients at 4 facilities were scheduled to receive Project ADAPT services. Fifteen clients at each of two facilities were selected for observation. They were chosen randomly, with the restriction that either the CPP or facility nurse had rated dressing behavior as "independent" for 2 clients, as "needing supervision" for 7 clients, and as "needing to be dressed" for 6 clients at each facility. Project ADAPT services began on April 1, 1984 at Facility 1 and will begin later at Facility 2. The current report analyzes data from observations made during the last two weeks of March, 1984, before Project ADAPT had begun at either location.

Reliability

According to Crano and Brewer (1973, p. 153), "The basic question of reliability may be most simply stated as follows: Do the ratings of two or more observers who have witnessed the same event(s) coincide to a major degree?" A measure is reliable to the extent that it is consistent. Since it would be much too time consuming and expensive to use a large number of multiple observations for a correlational analysis, this investigation had the goal of establishing the reliability of the COC from extremely high agreement in a few observations. The following steps were taken to reach high agreement:

1. The previously-described changes in the COC were made after discussions between four CPP staff who had used it for trial observations: the author, a Psychiatric Nurse (R.N.) assigned to Program Development and Evaluation (PDE); a Psychiatric Social Worker (M.S.W.) assigned to PDE; and the CPP Program Director (M.S.W.);

2. After the final form of the COC was agreed upon, three raters were selected: the Psychiatric Nurse, the Psychiatric Social Worker, and a Research Assistant (B.A. in Communications);

3. The nurse became the primary rater, which meant the other two would rate by themselves only after rating a client with her and disagreeing 0 or 1 point on the COC; and,

4. After rating six clients independently, the social worker and research assistant would again rate with the primary rater until sufficient agreement was reached.

For each rating by two people, a percentage agreement (PA) score was computed as follows:

$$PA = (A/T) \times 100$$

where A is the sum of agreement scores on all items, and T is the total possible agreement. Since each item is rated 0, 1, or 2, the agreement score for each item ranges from 0 to 2 per item. With 18 items, the value of T is 36.

The Psychiatric Social Worker observed two clients with the primary rater. They had 4 points of disagreement on the first observation and 0 points of disagreement on the second, for a mean PA score of 94.44%. The Research Assistant's three observations with the primary rater had 3, 2 and 0 points of disagreement, for a mean PA = 95.37%. With both PA mean scores over 90%, the Client Observation Checklist is clearly a highly reliable instrument.

Validity

Oskamp (1977, p. 38) defines validity as the " . . . accuracy or correctness of measurement." To the extent that ratings on a scale correspond to scores on an established scale, the measurement is valid. Validation for the COC was determined by correlating its subscales with the ratings on the Treatment Setting Determination Survey (TSDS, Keck, Ahr, & Harris, 1981), which was completed by client Casemanagers the same month as the COC rating. The TSDS was designed to determine if mental health clients of the Missouri Department of Mental Health are placed in a facility which matches their needs for care. Since CPP Casemanagers complete it on a quarterly basis, they are quite familiar with the instrument. While the TSDS rating options are in such broad categories that the instrument would not be expected to pick up subtle changes resulting from Project ADAPT interventions, it does provide an extremely useful measurement against which to test the validity of the COC.

Correlations were computed between COC summary scores for Bathing, Dressing, and Socialization items (referred to as BASUM, DRSUM, and SOSUM, respectively), TSDS summary scores for Activities of Daily Living (ADL), behavior problems, and psychiatric problems, and TSDS individual items for ADL, health, Global Assessment Scale (GAS) and whether the client has a friend or relative likely to visit (VISIT). Table 1 provides the correlation matrix between BASUM, DRSUM, SOSUM and the six ADL items from the TSDS. Several important patterns emerged from the correlational analyses:

1. Bathing and dressing form a very cohesive cluster as indicated by:

   a. the high correlation between BASUM and DRSUM (r = .81) on the COC;
   b. the high correlation between TSDSBATH and TSDSDRES (r = .91); and,
   c. the high correlations (across scales) between BASUM and DRSUM and the TSDS bathing and dressing items (.70 < r's < .80);

2. Socialization is related to several other variables as indicated by:

   a. the moderately high correlation between SOSUM and BASUM (r = .47) and DRSUM (r = .43);
   b. the strong correlation between SOSUM and TSDSEAT (r = .60); and,
   c. the moderately high correlation between SOSUM and GAS (not shown in Table 1, r = .47). However, GAS had a stronger relationship with BASUM (r = .68) and DRSUM (r = .55) and SOSUM had a surprising absence of a relationship with VISIT (r = .00);

3. The high correlation between fecal and urinary incontinence (r = .90) suggests incontinence is a unitary dimension.

The correlation matrix in Table 2 was also done separately for the 15 clients at each facility, which allowed a comparison of the validity of the TSDS for each Casemanager. For one Casemanager, the correlations between the COC and TSDS bathing and dressing items were quite high (.86 < r's < .87). However,

for the other Casemanager, correlations for TSDSBATH could not be computed due to absence of variability and correlations between TSDSDRES and BASUM (r = .48) and DRSUM (r = .27) were much lower. This suggests that the TSDS scale may have more or less reliability, depending on the person completing it.

In conclusion, the COC has been shown to be a valid instrument, especially for the bathing and dressing subscales. The correlations between BASUM, DRSUM, TSDSBATH, and TSDSDRES include potential error variance from two sources: differences between scales; and, differences between observers. The fact that the correlations are nevertheless quite high indicates that strong confidence can be given to these dimensions.

Differences between Two Facilities Chosen to Receive Project ADAPT

Time for observation. On the average, raters spent 37.60 minutes for each observation -- 17.87 minutes waiting to see the client and 19.67 minutes actually observing the client bathe and dress while conducting the interview. To the extent that a facility is efficient and well-organized, we would expect that raters would spend less time on the COC. There was no difference in the total time spent on the COC at Facility 1 (M = 33.73 minutes) and Facility 2 (M = 41.47 minutes), $t(28) < 1.0$. However, there was a large difference in the way raters' time was apportioned: at Facility 1, raters averaged 27.48% of their time waiting to see the client, and, at Facility 2, they spent 47.73% of their time waiting, $t(28) = 2.54$, $p < .02$. Aides at Facility 2 frequently commented to raters that clients could not begin their baths because there was so little hot water.

COC subscales. For each of the three COC subscales, there was a nonsignificant tendency for residents at Facility 2 to be slightly higher functioning. The t-test for these subscale items and the chi-square tests for individual item contrasts between facilities are given in Table 2. Since only 3 of 18 chi-square comparisons reach conventional levels of significance, we can conclude that the differences between the facilities are minimal. This is consistent with the Scheffe tests on TSDS ratings which found Facilities 1 and 2 did not differ on overall ADL scores or dressing scores, but did have a small but significant difference on bathing scores (Fitz, 1984B). This TSDS data, however, was for all clients at the two facilities rather than for the subset of 15 chosen for COC comparisons.

Conclusions

The COC was developed to use for a contrast of client functioning at two facilities, one of which received Project ADAPT services before the other. Clients were pretested at both facilities and will be tested again at two months and four months. Therefore, the research plan corresponds to Campbell and Stanley's (1963, p. 47) Design 10, The Nonequivalent Control Group Design, which " . . . involves an experimental group and a control group both given a pretest and a posttest, but in which the control group and the experimental group do not have pre-experimental sampling equivalence."

As they point out,

> The more similar the experimental and the control groups are in their recruitment, and the more this similarity is confirmed by the scores on the pretest, the more effective this control becomes. Assuming that these desiderata are approximated for purposes of internal validity, we can regard the design as controlling the main effects of history, maturation, testing, and instrumentation . . . (Campbell & Stanley, 1963, pp. 47-48)

The current report verifies that the Client Observation Checklist has high interrater reliability and is valid by comparison with the TSDS. Since difference between facility pretest scores on the COC are small and nonsignificant, use of the COC to compare changes at Facility 1 and 2 will be an effective technique to evaluate the success of Project ADAPT.

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Table 1

Correlations between Three COC Subscales and Six TSDS Activities of Daily Living Items

	BASUM	DPSUM	SOSUM	TSDSWALK	TSDSBATH	TSDSDRES	TSDSEAT	TSDSURIN	TSDSFEC
BASUM	1.0000	0.8107	0.4727	-0.5383	-0.7330	-0.7863	-0.6371	-0.5967	-0.5376
	(0)	(30)	(30)	(30)	(30)	(30)	(30)	(30)	(30)
	P=*****	P=0.000	P=0.008	P=0.002	P=0.000	P=0.000	P=0.000	P=0.000	P=0.002
DRSUM	0.8107	1.0000	0.4318	-0.6198	-0.7088	-0.7239	-0.5869	-0.6705	-0.6846
	(30)	(0)	(30)	(30)	(30)	(30)	(30)	(30)	(30)
	P=0.000	P=*****	P=0.017	P=0.000	P=0.000	P=0.000	P=0.001	P=0.000	P=0.000
SOSUM	0.4727	0.4318	1.0000	-0.1497	-0.4584	-0.5029	-0.5987	-0.3415	-0.2586
	(30)	(30)	(0)	(30)	(30)	(30)	(30)	(30)	(30)
	P=0.008	P=0.017	P=*****	P=0.430	P=0.011	P=0.005	P=0.000	P=0.065	P=0.168
TSDSWALK	-0.5383	-0.6198	-0.1497	1.0000	0.3516	0.3501	0.3658	0.6993	0.7426
	(30)	(30)	(30)	(0)	(30)	(30)	(30)	(30)	(30)
	P=0.002	P=0.000	P=0.430	P=*****	P=0.057	P=0.058	P=0.047	P=0.000	P=0.000
TSDSBATH	-0.7330	-0.7088	-0.4584	0.3516	1.0000	0.9166	0.7071	0.5011	0.4517
	(30)	(30)	(30)	(30)	(0)	(30)	(30)	(30)	(30)
	P=0.000	P=0.000	P=0.011	P=0.057	P=*****	P=0.000	P=0.000	P=0.005	P=0.012
TSDSDRES	-0.7863	-0.7239	-0.5029	0.3501	0.9166	1.0000	0.6486	0.4481	0.3820
	(30)	(30)	(30)	(30)	(30)	(0)	(30)	(30)	(30)
	P=0.000	P=0.000	P=0.005	P=0.058	P=0.000	P=*****	P=0.000	P=0.013	P=0.037
TSDSEAT	-0.6371	-0.5869	-0.5987	0.3658	0.7071	0.6486	1.0000	0.6184	0.5944
	(30)	(30)	(30)	(30)	(30)	(30)	(0)	(30)	(30)
	P=0.000	P=0.001	P=0.000	P=0.047	P=0.000	P=0.000	P=*****	P=0.000	P=0.001
TSDSURIN	-0.5967	-0.6705	-0.3415	0.6993	0.5011	0.4481	0.6184	1.0000	0.8975
	(30)	(30)	(30)	(30)	(30)	(30)	(30)	(0)	(30)
	P=0.000	P=0.000	P=0.065	P=0.000	P=0.005	P=0.013	P=0.000	P=*****	P=0.000
TSDSFEC	-0.5376	-0.6846	-0.2586	0.7426	0.4517	0.3820	0.5944	0.8975	1.0000
	(30)	(30)	(30)	(30)	(30)	(30)	(30)	(30)	(0)
	P=0.002	P=0.000	P=0.168	P=0.000	P=0.012	P=0.037	P=0.001	P=0.000	P=*****

(COEFFICIENT / (CASES) / SIGNIFICANCE)

Table 2

Ratings of Client Observation Checklist Items by Facility

	Facility 1			Facility 2			χ^2(df=2)	Both (1 & 2)		
	No	Part	Yes	No	Part	Yes		No	Part	Yes
BATHING CHECKLIST[1] (sum of 4 items: M_1=2.00; M_2=3.73; $t(28)$=1.82, $p < .09$)										
1. Neck & face	7	7	1	4	7	4	2.62, $p<.28$	11	14	5
2. Hands & arms	8	4	3	5	6	4	1.24, $p>.50$	13	10	7
3. Chest & groin	8	7	0	5	6	4	4.77, $p<.10$	13	13	4
4. Feet & legs	11	4	0	5	7	3	6.07, $p<.05$	16	11	3
DRESSING CHECKLIST[1] (sum of 6 items: M_1=3.00; M_2=5.73; $t(28)$=1.72, $p < .10$)										
1. Selected own clothes	15	0	0	11	0	4	2.60, $p<.11$	26	0	4
2. Put on underclothes	9	4	2	5	3	7	4.06, $p<.14$	14	7	9
3. Put on clothes	9	4	2	5	3	7	4.06, $p<.14$	14	7	9
4. Zipped, buttoned, etc.	12	0	3	7	2	6	4.32, $p<.12$	19	2	9
5. Put on socks/nylons	9	3	3	6	3	6	1.60, $p>.40$	15	6	9
6. Put on shoes	8	0	7	6	3	6	3.36, $p<.19$	14	3	13
SOCIALIZATION CHECKLIST[1] (sum of 8 items: M_1=8.40; M_2=11.00; $t(28)$=1.51, $p<.15$)										
1. "What's your name?"	4	3	8	2	0	13	4.86, $p<.09$	6	3	21
2. "What's the aide's name?"	7	3	5	1	2	12	7.53, $p<.03$	8	5	17
3. "What...do you do here?"	5	3	7	2	0	13	6.09, $p<.05$	8	3	20
4. Conversation by this time	13	0	2	9	0	6	1.53, $p<.22$	22	0	8
5. Conversation at any point	9	0	6	8	0	7	0.00, $p=1.0$	17	0	13
6. Answer anything	4	1	10	1	0	14	3.47, $p<.18$	5	1	24
7. Eye contact	0	6	9	4	4	7	4.65, $p<.10$	4	10	16
8. Conversation with anyone	7	0	8	7	1	7	1.07, $p>.50$	14	1	15

Note. See Appendix A for an exact statement of the COC items and description of the meanings of "No", "Part", and "Yes" ratings for each item.

[1]For each subscale CHECKLIST, "M_1" refers to the mean sum score at Facility 1 and "M_2" refers to the mean sum score at Facility 2.

APPENDIX A

A.T. _____

B.O.T. _____

E.O.T. _____

CLIENT OBSERVATION CHECKLIST

Client Name: _____ Facility _____ Date _____

Client ID: _____ Rater _____

I. BATHING CHECKLIST (sum = _____pts.)
(washing & drying)

	No	Part	Yes
1. Neck, Mouth, Rest of face	0	1	2
2. Hands & Arms	0	1	2
3. Chest & Groin	0	1	2
4. Feet & Legs	0	1	2

II. DRESSING CHECKLIST (sum = _____pts.)

1. Selected own clothes	0	1	2
2. Put on underclothes	0	1	2
3. Put on clothes	0	1	2
4. Zipped, Buttoned, Snapped, Hooked	0	1	2
5. Put on socks/nylons	0	1	2
6. Put on shoes	0	1	2

III. SOCIALIZATION CHECKLIST (sum = _____pts.)

RATER INTRODUCES SELF	No	Part	Yes
1. "What's your name?"	0	1	2
2. "What's the aide's name?"	0	1	2
3. "What sort of things do you do here?"	0	1	2
SHORT PAUSE			
4. Has the client initiated any conversation with you by this time?	0	1	2

AFTER THE FIRST 3 SET QUESTIONS YOU MAY CONVERSE WITH THE CLIENT ON ANY TOPIC. COMPLETE THE FOLLOWING AFTER THE CLIENT HAS BEEN DRESSED.

5. Did the client initiate conversation with you at any point?	0	1	2
6. Did the client ever answer anything you asked?	0	1	2
7. Was the client willing to have eye contact with you?	0	1	2
8. Did the client initiate conversation with anyone?	0	1	2

_____

COMMENTS:

STANDARDS FOR CLIENT OBSERVATION CHECKLIST

ABBREVIATIONS: A.T. = Arrival Time - On the first client observation check list, mark the time you arrived at the home. On successive checklists, mark the time your last checklist was completed.

B.O.T. = Beginning Observation Time - The time you begin the checklist.

E.O.T. = Ending Observation Time - The time the checklist is completed.

I. BATHING CHECKLIST

NO = unable or refused to perform the task.
PART = required assistance or verbal cues to perform the task.
YES = independently performed the task.

PLEASE NOTE: IF A SPECIAL CLEANING PROBLEM EXISTS, (i.e., COLOSTOMY, FACIAL WOUND, ETC.) THE CLIENT SHOULD BE ABLE TO CLEAN APPROPRIATELY IN ORDER TO RATE AS "YES."

*Specific examples for "PART"

1. missed neck, mouth or rest of face
2. missed a hand or arm
3. missed chest or groin
4. missed a foot or leg

II. DRESSING CHECKLIST

NO = unable or refused to perform the task.
PART = required assistance or verbal cues to perform the task or started, but did not complete the task.*(see below)
YES = independently performed the task.

*Specific examples for "PART".

1. can choose one or more appropriate items of clothing, or chooses all daily wear, but not suitable to the climate.
2. inside out or backwards
3. inside out or backwards
4. buttons or snaps wrong hole
5. inside out
6. wrong feet or can not tie laces

III. SOCIALIZATION CHECKLIST

Rating should be done according to how the client responds to the interview during the bathing and dressing observations.

QUESTIONS 1, 2, 3

NO = ignored, unable or refused to respond.
PART = begins a response but stops, or responds to a verbal prompt by other staff, or communicates nonverbally (ie, headshake), or with non-English vocalization (ie, grunt)
YES = any coherent response even if answer is incorrect

QUESTION 7

NO = no eye contact.
PART = glanced at rater one or more times, but did not maintain eye contact for longer than a second.
YES = maintained eye contact for longer than a second.

DEFINITION: Initiate conversation - any coherent, logical sequence of two or more words requiring a response from someone.